
SENATE COMMITTEE ON ENVIRONMENTAL QUALITY

Senator Allen, Chair

2021 - 2022 Regular

Bill No: SB 1164
Author: Stern
Version: 4/4/2022
Urgency: No
Consultant: Jacob O'Connor

Hearing Date: 4/20/2022
Fiscal: Yes

SUBJECT: Energy: building energy efficiency: document repository and registry

DIGEST: Requires the State Energy Resources Conservation and Development Commission, the Air Resources Board, and the Contractors' State License Board to submit two reports to the Legislature by January 1, 2024. One proposing a statewide heating, ventilation, and air conditioning equipment sales registry and compliance tracking system and the second proposing a statewide compliance document repository and data registry.

ANALYSIS:

Existing law:

- 1) Establishes the State Energy Resources Conservation and Development Commission (CEC) as the state's primary energy policy and planning agency. (Public Resources Code (PRC) §25000 et seq.)
- 2) Establishes the Contractors' State License Board (CSLB) under the Department of Consumer Affairs to license and regulate contractors including any person who maintains or services heating, ventilation, and air conditioning (HVAC) equipment that is a fixed part of the structure to which it is attached. (Business and Professions Code (BPC) §7000-7191)
- 3) Establishes the Air Resources Board (ARB) as the air pollution control agency in California and requires ARB, among other things, to review the efforts of all levels of government as they affect air quality. (Health and Safety Code (HSC) §39500 et seq.)
- 4) Requires the CEC to establish periodically updated building design and construction standards that increase the efficiency in the use of energy and water for new residential and nonresidential buildings. (PRC §25402.1(a))

- 5) Establishes Energy Efficiency Standards that include requirements for installation and acceptance test documentation to verify that heating, ventilation, and air conditioning equipment are installed and performing correctly. (California Code of Regulations, Title 24, Part 6)

This bill:

- 1) Requires the CEC, in consultation with ARB and the CSLB, to prepare and submit two reports to the Legislature by January 1, 2024. One report that proposes a statewide HVAC equipment sales registry and compliance tracking system and one report that proposes a linked statewide compliance document repository for California's Building Energy Efficiency Standards.
- 2) Requires the proposed systems to be capable of:
 - a) Allowing local building departments to identify noncompliant installations in their jurisdictions and allow the CSLB to identify and investigate contractors that are routinely violating licensure requirements and failing to comply with California's Building Energy Efficiency Standards;
 - b) Requiring stores and dealers that sell HVAC equipment to register the HVAC equipment serial number and contractor license number of the purchaser;
 - c) Identifying HVAC equipment that has not submitted required compliance, installation, and acceptance test documentation to the compliance document repository and data registry within a specified period of time.
 - d) Tracking documentation electronically and make them available to relevant parties for their building permit review process and for compliance and enforcement activities;
 - e) Providing building owners access to uploaded documents linked to buildings they own;
 - f) Providing the public the ability to check if projects in their area have obtained the required permits and have complied with compliance and acceptance testing documentation requirements; and
 - g) Providing the CEC the ability to analyze the data to evaluate compliance, inform development of building, appliance, and demand flexibility standards, and to inform program implementation and policy development.
- 3) Requires the reports to the Legislature to:
 - a) Make recommendations on the types of HVAC equipment that should be subject to the registry and tracking system and on enforcement measures for failure to submit necessary information to the compliance document repository and data registry;

- b) Estimate the cost of creating and operating the registry and tracking system and estimate the amount of fee to be charged per equipment purchase necessary to cover the operation and maintenance of the system;
- c) Identify any legal barriers to implementing the registry and tracking system and identify changes to state law required to overcome those barriers;
- d) Identify if a HVAC equipment sales registry and compliance tracking system would raise legitimate privacy or trade secret protection concerns and make recommendations to address those concerns; and
- e) Allow for public participation in the preparation and review of the reports.

Background

- 1) *Energy consumption of HVAC systems.* HVAC equipment accounts for approximately 18% of energy consumed in Californian households, according to the CEC's 2019 California Residential Appliance Saturation Study. According to the U.S. Energy Information Administration's 2017 Annual Energy Outlook, HVAC systems consume about 30% of the total commercial building energy consumption. Given that these two sectors account for about 37% of the state's energy consumption, HVAC equipment accounts for about 8% of all energy consumed in California.
- 2) *Energy demands from HVAC equipment will likely increase due to increasing global temperatures.* This effect can already be seen in the increase in the share of energy consumed in Californian households by AC systems from approximately 9% in 2009 to 15% today. As global temperatures continue to climb, Californians will rely more on HVAC systems, to the point that research has predicted an increase of air conditioning use by about 8% by the early 2030s when average global temperatures increase by 1.5 °C. Given that air conditioning is the main driver of residential peak load, if that increase is not mitigated it could result in an increase in rolling blackouts and days without air conditioning for Californians. Research has shown that marginalized communities often experience more intense temperature extremes making them disproportionately vulnerable to these periods without air conditioning.
- 3) *Incorrect installation and maintenance of HVAC units is a longstanding problem that decreases HVAC energy efficiency.* Research has indicated that poor quality installation can lead to the loss of 30-40% of the energy savings benefits of energy efficiency improvements. In 2008, at the direction of the Legislature, the CEC developed a plan to improve air conditioner efficiency and the working group from that plan concluded:

“Failure to ensure quality installations or maintenance of cooling systems result in a 20 to 30 percent increase in the peak electricity needed by such systems to provide customers with the cooling and comfort they demand on hot summer afternoons.

“The lack of quality control is exacerbated by the failure of many contractors to pull building permits and verify minimum quality installation when replacing air-conditioning systems.”

To address these concerns California has taken several actions including:

- The CEC entering into an agreement with CSLB to collaborate to improve the performance of licensed contractors;
- The California Public Utilities Commission (CPUC) establishing the Western HVAC Performance Alliance to work on solutions;
- The Attorney General’s Office requesting investor-owned utilities to mandate incentive applications of high-efficiency HVAC equipment in existing homes require affirmation of proper installation;
- The CEC emphasizing quality installation in programs aimed at home HVAC replacements using federal funding; and
- The CEC adopting compliance data registry requirements and authorization for a compliance document repository.

Despite these efforts, a 2017 assessment by CPUC found that only 7.9% of the one million relevant HVAC installations in 2014 pulled permits for the project.

- 4) *Developing an equipment sale registry will improve compliance.* In their 2015 Existing Building Energy Efficiency Action Plan the CEC establishes a goal for improving retrofit compliance with permitting and code requirements to 90 percent by 2020. In order to meet this compliance goal, the Plan recommended developing an HVAC equipment sales registry that can be used to track HVAC sales to ensure that permit requirements are followed. In the 2021 Integrated Energy Policy Report the CEC also lays out several specific recommendations which include encouraging simplification of building department permitting and improving the ability to discover when projects fail to pull building permits.

Comments

- 1) *Purpose of Bill.* According to the author, “Barriers to effective compliance and enforcement are undermining California’s building energy efficiency standards. Studies show, for example, that the vast majority of HVAC replacement projects are performed without a permit and without completion of

acceptance testing and other Title 24 energy efficiency verification requirements... Currently, however, there is no way to readily track and identify HVAC replacements that are installed without a permit.”

“In addition, stakeholders have long called for a central Title 24 compliance document repository and data registry that would provide building officials the ability to simply type in an address in order to confirm that all required Title 24 compliance documents have been completed. Even when permits are pulled, the large number of Title 24 energy efficiency compliance documents now required for each project makes it difficult for building officials to verify compliance, resulting in uneven enforcement.

“My legislation requires the development of proposals for creation of a central Title 24 compliance document repository/registry and a HVAC sales registry. These proposals shall include identification of funding requirements and identification of any further legislative action that would be required to implement these plans.”

- 2) *This bill requires proposals for two distinct but linked systems.* The HVAC registry and compliance tracking system will serve as a database for monitoring if and when permits are completed for HVAC equipment installation and performance testing. The document repository will act as the central location for submission of documents generated during the permitting, installation, and testing process. The two will be linked so that when documents are submitted the tracking system can be updated and the tracking system can be used to find and verify relevant documentation in the repository.
- 3) *Establishing data repositories will ease compliance and enable enforcement of HVAC installation standards.* By creating one centralized online database for HVAC installation permitting, this bill will improve the CEC’s ability to monitor when installations are occurring without the proper permitting or by unlicensed contractors. This will ease the need for enforcement and encourage compliance with current regulations by simplifying the compliance process to one state-wide repository. This could improve peak efficiency of HVAC systems across the state by as much as 30%, which will have benefits in reducing energy costs, greenhouse gas emissions, and lowering the strain on the electric grid as global temperatures continue to rise.
- 4) *The timeline may be too short to produce a quality report.* Given that this bill will require a Budget Change Proposal to implement and that the CEC will likely need to hire an outside contractor to produce the report, the deadline of January 1, 2023, will likely not allow for much time to allocate funds, screen

proposals, produce and then review the report. *The author may wish to consider amending the bill to require the CEC to deliver the report by July 1, 2024, or later.*

Related/Prior Legislation

SB 1414 (Wolk, Statutes of 2016, Chapter 678) directed the CEC to approve a plan that will promote the installation of central air conditioning and heat pumps in compliance with Part 6 of Title 24 of the California Code of Regulations, and authorizes the CEC to adopt regulations consistent with the approved plan. The plan from this report is set to be finalized in 2022.

SB 350 (De León, Statutes of 2015, Chapter 547) directed the CEC to adopt and enforce a responsible contractor policy to ensure that retrofits meet high-quality performance standards and reduce energy savings lost or foregone due to poor-quality workmanship.

AB 2021 (Levine, Chapter 734, Statutes of 2006) directed the CEC to develop a plan to improve the energy efficiency and decrease the peak electricity demand of air conditioners.

DOUBLE REFERRAL: This measure was heard in Senate Energy, Utilities and Communications Committee on March 28, 2022, and passed out of committee with a vote of 12-0.

SOURCE: California State Pipe Trades Council; Western States Council of Sheet Metal Workers

SUPPORT:

California Association of Sheet Metal & Air Conditioning Contractors National Association
California Building Officials
Natural Resources Defense Council
Western States Council Sheet Metal, Air, Rail and Transportation

OPPOSITION:

Air Conditioning, Heating and Refrigeration Institute

ARGUMENTS IN SUPPORT: According to the Western States Council of Sheet Metal Workers, “Efficient heating, ventilation and air-conditioning (HVAC)

systems are essential for people's health as well as for meeting California's climate goals. The problem is 85% of replacement HVAC systems are installed incorrectly, permits for HVAC units are only issued 10% of the time, and contractors only comply with California Energy Code's installation requirements 15% of the time. This leads to a 20 to 30 percent increase in unnecessary energy use. This lack of compliance is not only bad for health and the environment, but it also punishes contractors who do comply and are unable compete with the lower costs of those who cut corners.

"A central compliance document registry is a critical first step in creating a tracking system that would address the problem of construction work without permits."

ARGUMENTS IN OPPOSITION: According to the Air-Conditioning, Heating, and Refrigeration Institute, "Digital tracking will not lead to higher compliance rates nor "find" non-compliant installations. Since manufacturers do not know which products will end up installed in California, their only recourse would be to provide all serial numbers to the tracking system. This would lead to massive gaps for all the products that never arrive in California. It is unclear how state officials would distinguish between non-compliant products and those still in the inventory.

"AHRI also has significant concerns with the potential for any sort of document repository or data registry being the target of cyberattacks. Ensuring data and consumer privacy is a top priority for our manufacturers."

-- END --